

**CHANNEL GAIN CONTROL FOR AN OPTICAL COMMUNICATIONS SYSTEM  
UTILIZING FREQUENCY DIVISION MULTIPLEXING**

**ABSTRACT OF THE DISCLOSURE**

Attenuation caused by dispersion in an optical fiber communications system is compensated. A number of low-speed channels is to be transmitted across an optical fiber. Each low-speed channel is allocated a different frequency band for transmission. The attenuation caused by dispersion is estimated for each of the frequency bands. The power of each low-speed channel is adjusted to compensate for the estimated attenuation. The power-adjusted low-speed channels are frequency division multiplexed together to produce an electrical high-speed channel suitable for transmission across the communications system.

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